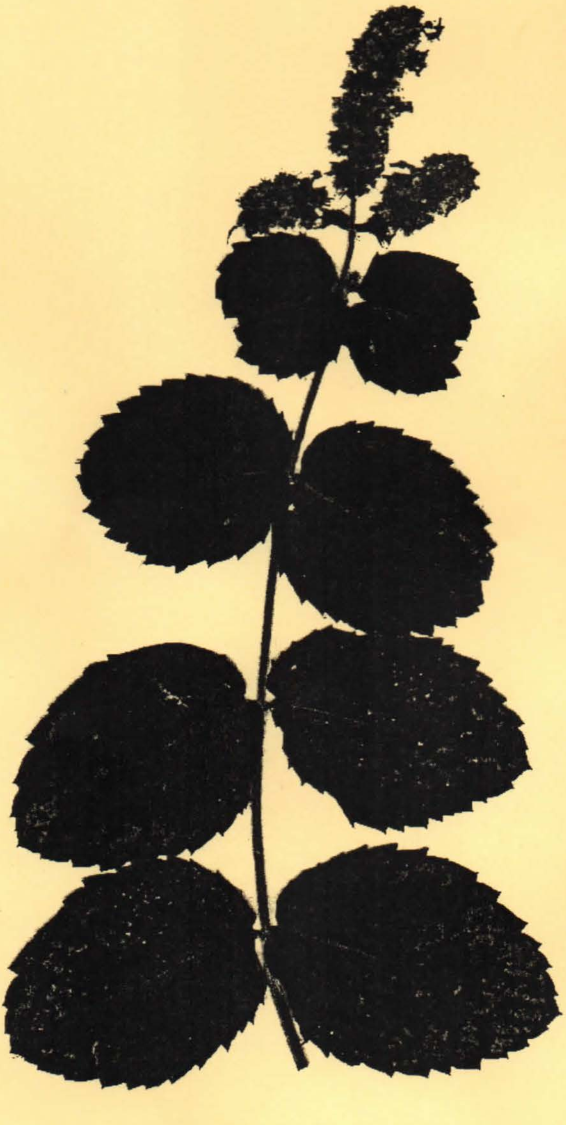
Shropshire Flora Group

Newsletter

~ Spring 1998 ~



Mentha x villosa
var. *alopecuroides*

Apple Mint

Collected at
The Mere,
Ellesmere

28 September 1997

Marsh Gentians at Cramer Gutter
Guide to Docks
Rumex maritimus L. in Shropshire
The Border Bryologists, 1997

* * *

In association with the Botanical Society of the British Isles

Shropshire Flora Group Newsletter No. 6
Spring 1998

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Data is managed using Recorder *Shropshire Flora* and maps produced by DMap for Windows v 6.3b, kindly supplied by Dr Alan Morton.

We would like to acknowledge the generous support of the Leighton Committee of the Shropshire Wildlife Trust, English Nature and Epson Telford Ltd.

Flora Group News

Sarah Whild

Our meeting on December 6th was attended by a total of 30 people. The talk by Jonathan Briggs on the conservation and restoration of the Montgomery Canal, and his lightning review of the BSBI/Plantlife Mistletoe survey, were very informative and well received. Thanks are also due to Sue Townsend and the Field Studies Council for generously hosting our annual meeting again and providing, as always, excellent refreshments.

One of the things we discussed was the constitution of the Flora Group. It was agreed that we would form a working group, which met at the end of January to decide what needed to be done. In the event, we concluded that a formal constitution was necessary, but that we would not yet undertake any major commitments, such as registering as a charity. A provisional committee was appointed to come up with recommendations and a draft constitution. It will be working on these matters over the next few months and will present its proposals to the full meeting of the Flora Group in the autumn.

The provisional officers are as follows: Chris Walker (Chair), Sarah Whild (Secretary), Roger Green (Treasurer), Alex Lockton, Sylvia Kingsbury and Ruth Dawes. We do not envisage any radical changes to the way the group operates, on a day-to-day basis, but we hope to put it on more sound financial and legal footing, and perhaps give ourselves an opportunity to expand some of the group's activities.

Our congratulations to Daniel Wrench, who has recently been elected onto the council of the British Bryological Society. He was involved in the Flora Group for several years while working for English Nature at Attingham Park, but has since moved to Southport and currently works on the Sefton Coast Life Project.

I am pleased to acknowledge the generous gift of a colour inkjet printer to the Flora Group, from Epson Telford Ltd, who are famous for the *Sanguisorba officinalis* meadow at their factory in Telford, and who successfully restored a population of Great Crested Newts by constructing some ponds, prior to a new factory development at the same site. The Flora Group has been without a printer of its own for a couple of years, and the advantage of a good printer is the colour distribution maps we can produce.

Talking of distribution maps, there is still much recording to be done towards the Atlas 2000 project. There are plenty of squares with fewer records than they should have, so I am keen to recruit as many new recorders as possible. However, when you are starting off recording plants, just being able to identify them is only half the problem. You also need to know how to fill in a record card, give accurate grid references, decide whether or not to take a specimen of the plant to get it identified by an expert..... anyway, to help you get to grips with all of these various aspects, the Flora Group is running a training day on 14th March at Preston Montford Field Centre (details on next page). I would urge as many recorders to attend as possible, to refresh existing skills as well as to learn new ones. Alex will also bring along the Flora Group computer database and there will be an opportunity to see how records are entered, and exactly what happens to your records from the moment you write a name in your notebook or score a line through a card, to inputting onto the computer, to putting the records through a validation procedure to finally publishing records in checklists, rare plant registers, or sending off to Monkswood to be incorporated into national distribution atlases.

Hope to see you there.

I am grateful to have received records from the following in 1997:

NH Barnett
Sara Bellis
John Bingham
Joan Brown
Joyce Bullen
Ruth Dawes
Julie Edwards
Peter Ellis
Joan Fallows
Mary Fuller
Roger & Pam Green
Francesca Griffith
Jean Hooson
Jane Ing
Jenny Joy
Graeme Kay
Sylvia Kingsbury
Ray Knowles
Richard Lansdown
Mark Lawley
Alex Lockton
Tavia MacLean
Jackie Pedlow
Franklyn Perring
Susan Pinsent
Tom Preece
Geoffrey Ransome
Pauline Rigby
Rob Stokes
Janet Stone
Tina Teearu
John Thompson
Kate Thorne
Ian Trueman
Marjorie Wainwright
Chris Walker
Mary White
Dorothy Young

English Nature
The National Trust
Severn Gorge Countryside Trust
South Shropshire Countryside Project
Field Studies Council
Environmental Consultancy, University of Sheffield
British Waterways

Field Meetings for 1998

Sometimes there are last minute changes or cancellations so, to avoid disappointment, it is best to confirm a day or two prior to the meeting. You can call Sarah or Alex on 01743 343789. If you are late or get lost, our mobile number is 0585 700368. Always bring outdoor clothing and a packed lunch unless there are instructions to the contrary. A hand lens and field guide such as Francis Rose's *Wild Flower Key* are useful.

Recording session @ Preston Montford. March 14th. 11 am - 3 pm

Meet at Preston Montford Field Centre at 11am on Sunday 14th March. Bring a packed lunch and outdoor clothing so that we can explore the grounds if the weather is fine. Otherwise we can stay indoors and crowd around computers.

The aim is to discuss recording techniques and talk about how and why we collect data. Topics covered will include the use of recording cards; preparing specimens and using referees; how to define a site or identify suitable areas for survey; and what we do with the information once it is collected.

Please book a place if you want to attend this session, so we have some idea of numbers. We would appreciate a donation of £2.50 on the day as a contribution towards the hospitality of the Field Studies Council.

Earl's Hill, Pontesbury. May 24th. 11 am - ca. 4 pm

This was the first Nature Reserve in Shropshire, given to the Wildlife Trust in 1963. It has a fascinating history and equally good botany. During the coming year we hope to review all the records for this site, seeing if we can relocate some of the old recorded species, such as Bloody Crane's-bill, *Geranium sanguineum*, and Wild Service-tree, *Sorbus torminalis*. During this field trip in the spring we can search for the ephemerals such as Upright Chickweed, *Moenchia erecta*, on the higher slopes and explore the wooded valley for such exotica as Upland Enchanter's-nightshade, *Circaea intermedia*. Meet at the car park at SJ408056: take the A488 from Shrewsbury, turning left past Rea Valley Tractors at Pontesford. There is only limited space, so please share a ride if you can.

Candy Valley, near Oswestry. June 7th. 11 am - ca. 4 pm

Meet at the Mill Inn, Candy Valley, grid ref. 255282, at 11 am. The valley has a stream and a number of interesting meadows; also a large mixed woodland with an interesting flora. Possibilities for the day include seeing Yellow Figwort, *Scrophularia vernalis*, at nearby Llanforda, and moving on to Llyn Ruddwyn in the afternoon, if we can get permission. For lunch, Ruth Dawes says the pub is very good, but I've not been there and you may be safer bringing a packed lunch just in case.

Sunday June 21st. Wyre Forest. 10:30 am. SO714766

Recording in the Wyre Forest. Follow the minor road leading south from the B4194 at Bradley Farm, Kinlet, towards Furnace Mill/Far Forest. Park by sharp bend with a small layby and a gated forestry entrance at SO714766, at 10:30 am. We will be recording in the woodland and along a stream in the morning (hopefully good dragonfly territory, too) by kind permission of Mr Mike Butler / Westward Woodlands. Carry a light snack and bring lunch to have back at the cars at 1.30.

In the afternoon we shall move on to Bell Coppice Meadows, a species-rich grassland which is part of the Wyre Forest National Nature Reserve. This session is organised by John Bingham.

August 1st. Wetland Plants identification. 11 am at the Montgomery Canal

Meet at the car park by the canal, opposite the Queen's Head pub, at SJ338268. This isn't a recording session, but a chance to learn identification of various aquatic plants, with Sarah Whild. We shall be moving on to other wet environments during the day, so bring sensible footwear and a packed lunch. I always consider it worth while to bring a bottle of water for washing hands when working on water plants.

Sunday September 20th. 11 am at Colemere Country Park, SJ435328

Cole Mere and Shropshire Union Canal. This could be considered a well recorded area, but you would be surprised how little people stray off the beaten track. Recent changes of the management of the grassland should have produced some interesting results, and there are old records for *Carex elongata* on the canal.

New Records

Sarah Whild & Alex Lockton

First County Records (VC 40)

Bidens frondosa L., **Beggarticks**, is a alien species related to our native *Bidens cernua* L., **Nodding Bur-marigold**, and *B. tripartita* L., **Trifid Bur-marigold**. It is widely established along the canal network in Britain, and was found simultaneously in two locations in Shropshire, so it has probably been here, undetected, for some time. The joint first records are:

- Shropshire Union Canal at Grindley Brook, SJ522431, G.M. Kay. 22/09/1997. Field record.
- Frankton Locks, Montgomery Canal, SJ369316, S.J.Whild, 22/09/1997. Herb. **SFG.**

Ilex x altaclerensis (Loudon) Dallimore, **Highclere Holly**, is a fairly common horticultural hybrid between *Ilex aquifolium* L. and *I. perado* Aiton, with a number of cultivars, including variegated forms. It is probably quite widely planted around the county, and may well be overlooked when it occurs in hedges. A good distinguishing feature is the forward-pointing spines on the leaves, which are flatter than in the native holly. It should be recorded when it is found outside gardens, even if you suspect it was planted, because of course it would be a nonsense to put it down as *I. aquifolium*. Although Stace gives only these two species of holly in his *New Flora*, as the only ones which naturalise in Britain, there appear to be a good many more species grown in gardens, so care should be taken with identification. The first county record is by Rob Stokes, by the old A5 at Overley Hill near Wellington, SJ6111. 9 October 1997. Herb. **SFG**. It has also be found as a long-established plant in the overgrown grounds of Cound Hall, SJ561053. SJW & A.J. Lockton, 23 October 1997. 2nd VC record.

Lonicera japonica Thunb. ex Murray, **Japanese Honeysuckle**, naturalised in a hedge at Wombridge, Telford (SJ6911). Rob Stokes, 17 September 1997. 1st VC record. Herb. **SFG**.

Mentha x gracilis Sole, **Bushy Mint**, was one of the four species of mint collected from the Mere, Ellesmere, during the Flora Group visit there on 28 September 1997. This one was found on the north-east shore, at about SJ408351. Dr R.M. Harley, of the Royal Botanic Gardens, Kew, has determined it to be this hybrid between *M. arvensis* L, **Corn Mint**, and *M. spicata* L, **Spear Mint**. There are, in fact, two prior records of this mint in Shropshire, both recorded along the River Severn in Shrewsbury by Rob Stokes, in 1995 and 1997, but neither of these are supported by refereed voucher specimens. I shall therefore leave this one to stand as the first confirmed county record, until further evidence of it along the river is forthcoming. Coll. SJW, det R.M. Harley. Herb. **SFG.**

Another product of the Flora Group trip to The Mere was *Mentha x villosa* var. *alopecuroides* (Hull) Briq., **Garden Apple-mint**, found on the south shore at SJ406345 (see front cover). It was well established in a large and luxuriant patch near the water. I suspect this is one of the commoner of the cultivated mints to become established in the wild, and probably accounts for a good number of old records for *Mentha rotundifolia* and *Mentha suaveolens*. However, it has never been definitively recorded in the county before, so this must stand as the first county record unless any old voucher specimens turn up. It is a hybrid between *M. spicata* L. and *Mentha suaveolens* L. Ehrh, **Round-leaved Mint**. Coll. S.J. Whild, det. R.M.Harley. Herb. **SFG.**

Raphanus sativus L., **Garden Radish**. Established on a roadside verge at Overley Hill, SJ6110. Rob Stokes, 17 September 1997, conf. SJW. 1st VC record.

The following first records for roses are the result of a project undertaken by Dr Kate Thorne for a course at Birmingham University. Kate will be continuing her researches next year, and will be drawing up a new county checklist for this genus. In the meantime, these are the first exciting results:

Rosa x shoolbredii Wolley-Dod (*R. mollis* Sm. × *R. sherardii* Davies). The Bog. SO355989. On the edge of a track with *R. mollis* and *R. sherardii*. A.K. Thorne det. A.L. Primavesi, 1997.

Rosa x rothschildii Druce (*R. sherardii* Davies × *R. canina* L.). Tankerville. SO357998. A.K. Thorne det. A.L. Primavesi, 1997. 1st record for which we have details, although it has previously been recorded in SO39.

Rosa x glaucoides Wolley-Dod. Both *Rosa mollis* × *R. caesia*. Blakeridge Wood, SO2986. Several bushes in a laneside hedge. A.K. Thorne det. A.L. Primavesi, 1997.

Rosa x molletorum Heslop-Harrison. Oswestry, SJ2629. M. E Roberts, det. A.L. Primavesi. 7 September 1995. 1st VC record. Oswestry Old Racecourse, SJ2530. M.E. Roberts. 5 November 1996. 2nd. (Still present in both locations in 1997. A.K. Thorne, det. A.L. Primavesi).

Marjorie Wainwright and Elizabeth Roberts found a flourishing colony of *Solanum nigrum* ssp. *schultesii* (Opiz) Wessely, a subspecies of **Black Nightshade**, on a pavement in Oswestry (SJ3029) in July 1997. This is an introduced species similar to our native *S. nigrum* ssp. *nigrum* L. but with many spreading, gland-tipped hairs on the stem and leaves. This is a second county record, following a first by Rob Stokes in 1994.

Rumex x lingulatus Jungner, a hybrid between *R. hydrolapathum* Huds., **Water Dock**, and *R. obtusifolius* L., **Broad-leaved Dock**, was found by Richard Lansdown at a couple of locations along the Montgomery Canal, while conducting a survey for British Waterways. It is rather like Water Dock in size and habit, but the leaves have a cordate rather than a cuneate, or tapering, base. Specimens from a section of canal in Shropshire, at SJ351282, 6 October 1997, have been confirmed by J.R. Akeroyd and have been deposited at **RNG**.

Sparganium erectum L. ssp. *erectum* - a subspecies of **Branched Bur-reed**, has been recorded in Shropshire, prior to last year, only at Brown Moss, where it was found by Edward Rutter in 1962. It is now found to be fairly frequent along the Montgomery Canal south of Crickheath. The 2nd VC record is by Richard Lansdown, at SJ289232, 13 October 1997. Herb. **SFG.**

Sparganium erectum ssp. *microcarpum* (Neuman) Domin - another **Branched Bur-reed**, was reported by William Hunt Painter at several locations in eastern Shropshire in the late 19th and early 20th centuries. The most recent of these, however, is dated 1904, so it is useful to have a more up-to-date find. It is probably the least common of the bur-reeds on the Montgomery Canal, being found in only one location, at SJ361289, near Rednal (6 October 1997, R.V. Lansdown). Herb. **SFG.**

Sparganium erectum ssp. *oocarpum* (Celak.) Domin is the third (and last) of the branched bur-reeds to have been recorded anew this year (the other - ssp. *neglectum* (Beeby) K. Richt - is quite widely known). It was collected by members of the Flora Group at The Mere, Ellesmere (SJ408344, 28 September 1997, SJW conf. R.V. Lansdown, 1st VC record) and is distributed along the northern, Shropshire, half of the Montgomery Canal, but appears to be rare in the Montgomeryshire sections. The 2nd VC record is from the canal south of Frankton Locks at SJ361298 (RVL, 6 October 1997). Herb. **SFG.**

Tropaeolum majus L., **Nasturtium.** Naturalised in a hedgebank near Buildwas, SJ6304. Rob Stokes, 17 September 1997, conf. SJW. 1st VC record.

Vulpia muralis (Kunth) Nees, an alien grass species, was found growing under a bird table in Whitchurch (SJ5341) by Jean Hooson (det. R.M. Payne & T.B. Ryves) in 1997.

Rare Plants

Cirsium acaule (L.) Scop., **Dwarf Thistle**, was re-found on the Shropshire side of Llanymynech Hill (SJ22) by D. Guest and S. Smith, who were doing some survey work for the Countryside Council for Wales. It had not been recorded in this part of Shropshire since the 1970s, but was known to Doris Pugh in this area for many years. *Cirsium acaule* is now known in four sites in the county, and so no longer counts as "rare".

John Bingham found *Serratula tinctoria* L., **Saw-wort**, in a new location in 1997. The site is a species-rich grassland bank alongside a road near Sturt (SO7278), where there are several plants along a stretch of 100m or so. There are now three sites in the Wyre Forest where this plant has been recorded in the last 10 years which, together with the two others sites in the county, means that it should also be removed from the rare plants list.

Two visitors to the county last summer - Nicholas and Elizabeth Sturt, from West Sussex - reported finding *Verbascum lychnitis* L., **White Mullein**, at Aston Munslow (SO58). There are very few records for this species in the county, but it has occasionally been found as a casual or a garden escape. The plants at Aston Munslow were apparently naturalised on a roadside bank, with poppies of garden origin. This village is evidently a centre for mulleins, with *Verbascum virgatum* Stokes, **Twiggy Mullein**, having been recorded there by Pat Parker a few years ago.

Other interesting finds

Tom Preece noticed a comment in the last newsletter that **Cricket-bat Willow**, *Salix alba* L. var. *caerulea* (Sm.) Sm. is rare in Shropshire. We suspected that it might be under-recorded and had not included it in *Rare Plants of Shropshire*, but Tom provides a solid reason for this. "For a number of years", he writes. "I ran a research group on water mark disease of this tree; hence apart from recording many other plants in Shropshire, we always particularly looked for CBWs. The only place where they can be found in significant numbers in Shropshire is at and near Pentreheylin Hall in the flood plain of the River Vyrnwy near Maesbrook... At least 100 or so in various directions, along roadsides, etc. They were planted by Major Maclean."

John Bingham reports that he found *Viola lutea* Hudson, **Yellow Mountain Pansy**, on both Titterstone Clee (SO57) and Brown Clee (SO58) during the 1980s. The records were sent to the county recorder but, for some reason, never made their way onto our database. My apologies for this error, which led me to state in the last newsletter that it was 150 years since *V. lutea* was last seen on Titterstone Clee. John's record for Brown Clee was the first since it was recorded there by J.B. Duncan in 1905, and is presumably the one shown by a black dot in Sinker's *Flora.*

Lithospermum officinale L., **Common Gromwell**, was found in the Wyre Forest in 1997 by Ms R. Winnall (conf. John Bingham). Just one plant was growing on the side of a track at SO7476. This is the first record for it in the Wyre (at least, in the Shropshire part of the Wyre) since George Jorden reported it in Leighton's *Flora* of 1841.

Erratum

Mary Fuller's garden, and the *Allium triquetrum* L., **Three-cornered Garlic**, therein, are in Aston Munslow SO5186) not Oswestry, as reported in the last newsletter. Our apologies to Mary for this error.

Records to withdraw

One of the intended outcomes of publishing our records in *Rare Plants* and the newsletter is that it gives people an opportunity to correct them. I am delighted to say that we have had a number of comments recently, often correcting minor details, but sometimes providing important information about the county flora. The following are accounts of a couple of species which should be withdrawn from the county list.

Circaea alpina L., Alpine Enchanter's-nightshade

This was recorded by J.C. Melvill in 1915 at Meole Brace. He originally thought it was *C. x intermedia* Ehrh., **Upland Enchanter's-nightshade**, but sent specimens of this, and a similar population from a site in Cheshire, to the Botanical Exchange Club for confirmation. We don't know who the expert was, but Melvill was told that his plant was, in fact, *C. alpina*, which is a most exciting find. It is conceivably possible that Melvill's plant had escaped from a garden, and was indeed *alpina* as stated, but Clive Stace writes:

> "Peter Rowan in the early 1960s did a very thorough revision of *Circaea* in Britain (see Watsonia 5:262-272, 1963). He examined all the material labelled *C. alpina* or C. *x intermedia* in a range of British herbaria, including BM, K, E, OXF, NMW, MANCH and ABD, but found no *C. alpina* in England outside the Lake District. It seems very likely he saw Melvill's Shropshire stuff, because Melvill's material is in ABD, K, MANCH, NMW, OXF and elsewhere. Hence I guess he redetermined it as *C. x intermedia.* One would have to find the material in one of these herbaria to see Rowan's determination label on it. Melvill's Cheshire material is *C. intermedia.*"

Charles Sinker offered an interesting interpretation of this, in the *Ecological Flora.* He notes that *C. x intermedia* occurs along the Habberley Brook at Earl's Hill, "on the same river system" as Melvill's site at Meole Brace. Of course it was Sinker who discovered the Earl's Hill site in the 1960s, so this would have been unknown to Melvill. It may be that some of the plants washed downstream, and grew for a while at Meole Brace. In the light of the above comments, this seems the most likely explanation but, unless one of Melvill's specimens does indeed turn up, we can never be absolutely sure. In the meantime, however, it seems wisest to describe *C. alpina* as absent from Shropshire.

Galium pumilum Murray, Slender Bedstraw

There is a record for this given in L.C. Lloyd & E.M. Rutter's *Handlist of the Shropshire Flora* (1957). The comment reads "recorded only from Titterstone Clee (Div. 10 or 12)." It is undated and anonymous, and does not appear to have been published in any of the annual reports of the Caradoc & Severn Valley Field Club; perhaps it originates with Hamilton's missing manuscript of 1913.

Sinker, in 1985, changed the record to *G. sterneri* Ehrend., **Limestone Bedstraw**, and described it as follows: "Extinct? Recorded in the past (as *G. pumilum*) from Titterstone Clee, but identification doubtful: K.M. Goodway did not accept this record for either *G. sterneri* or *G. pumilum* Murray s.s."

The situation was further confused when this species was accidentally crossed off on a BRC card for Titterstone Clee in 1990, apparently in place of *G. palustre*, which is immediately above it on the list. We should have queried it immediately, but unfortunately the record was accepted, and it has been published in both editions of *Rare Plants*. It should be noted that this is definitely an error, and John Bingham (to whom the record was credited) corrected it immediately upon finding out about it.

Whether the earlier record is correct or not remains unknown. To judge by the distribution of *G. pumilum* and *G. sterneri*, either could conceivably be found in Shropshire, given the correct conditions. There is Carboniferous Limestone on Titterstone Clee, which might provide a suitable substrate. However, in the absence of any specimen, or even a recorder's name for this record, and given that it was rejected by Goodway, it seems sensible to consider this an error, and strike both *pumilum* and *sterneri* from the county checklist. This view is reinforced by the fact that the correct taxonomy and identification of the *G. saxatile* lookalikes was not fully worked out until the 1950s.

Notes on the Ecology of Cramer Gutter Nature Reserve

Alex Lockton & Sarah Whild

Introduction

Cramer Gutter Nature Reserve is widely known for its population of Marsh Gentian, *Gentiana pneumonanthe*, for which it is the only known site in Shropshire and the last remaining station in the whole midlands region. In the autumn of 1997 several people wrote, independently, to the Flora Group, expressing concern at the apparent decline of this species. As a response, we decided to draw together all the existing information and see if there is a problem. It was rather too late to undertake any new field work, so the following report is a desk study of the existing information. John Bingham, Chris Walker and Mark Lawley, who all know the site well, have been kind enough to contribute records and comment on the draft. English Nature, the Shropshire Biological Records Centre at Ludlow Museum, the Field Studies Council, the Shropshire Wildlife Trust, the Border Bryologists, and the Institute of Terrestrial Ecology at Monks Wood have all kindly allowed us to incorporate information from their files. John Pagett has kindly assisted with historical information.

Site Description

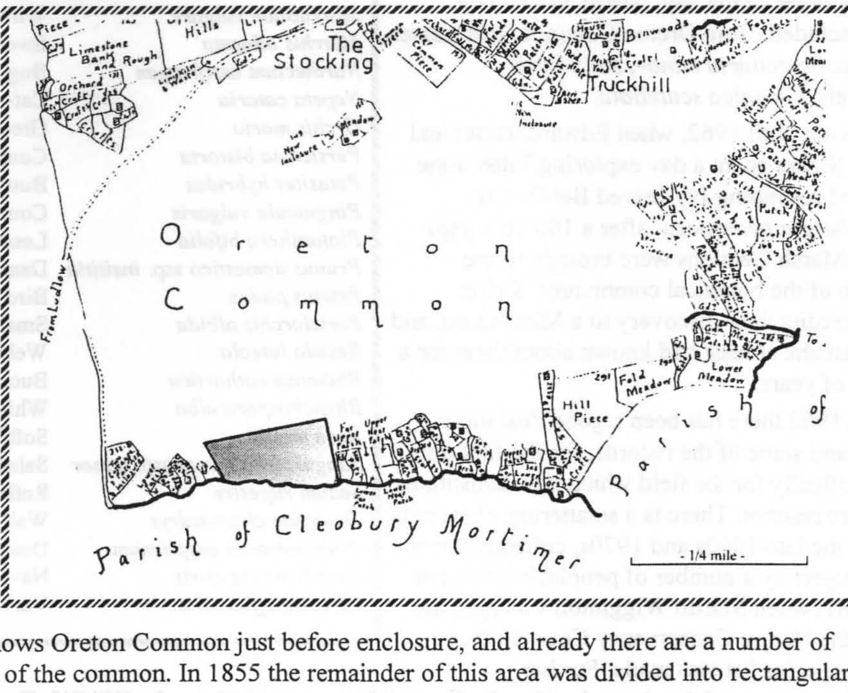
The reserve is a more-or-less rectangular field of 4.14 ha (10.23 acres), situated about grid reference SO648794, in the parish of Farlow. It is a sloping field with a south-easterly aspect, at an altitude of 180 - 210m. The southern boundary is a stream which flows east out of Catherton Common towards the River Rea, which eventually drains into the Teme near Tenbury Wells. It lies in an area of complex geology in the foothills to the north-east of Titterstone Clee, on a boundary between Coal Measures and Millstone Grit, with an outcrop of Carboniferous Limestone at Oreton, a short distance away to the north.

The vegetation ranges from fairly dry species-rich grassland at the top of the field to wet tall herb and *Sphagnum*-filled hollows near the stream. In the middle there are a number of permanently wet flushes and a substantial quantity of Western Gorse, *Ulex gallii*, scrub. The most interesting feature of the reserve is, of course, the population of Marsh Gentians, but there are a number of other species and habitats of interest, mainly associated with the acidic heathland/mire communities and the more base-rich flushes.

Catherton Common was designated a SSSI in 1963, and this encompasses the field at Cramer Gutter, which was bought by the Shropshire Wildlife Trust in 1988 using a grant from the World Wide Fund for Nature. It has been managed as a nature reserve since then. There is open access to the public, as a footpath runs across the middle of the field from a nearby road. It is let for grazing by cattle, and bees have traditionally been kept at one end of the field.

Concern has been expressed about the apparent spread of the gorse since it has become a nature reserve, and several people have commented that the gentians seem to be declining in number.

Below: detail from the 1848 tithe map for Oreton Township, showing where Cramer Gutter reserve is now situated (shaded grey).
© Shropshire County Council. Reproduced by permission. Redrawn by H.D.G. Foxall in 1985.



History

In the Domesday Book (see Page, 1908), the area where Cramer Gutter now stands is shown as a "detached portion" of Herefordshire, and receives scant attention. It was not until the Reform Act of 1832 that this parish was transferred to Shropshire, and this perhaps helps to explain why enclosure came so late. The map above shows Oreton Common just before enclosure, and already there are a number of smallholdings around the edges of the common. In 1855 the remainder of this area was divided into rectangular fields, and New Road and Cramer Gutter Road were constructed. The parish boundary remained the same, however, and Catherton Common, on the other side, was never enclosed.

The area has attracted a lot of attention over the years. A good account of the history is given by John Bingham in an article in *Shropshire Naturalist* in 1992. This provides an introduction to the ecology of Cramer Gutter, but does not always distinguish the reserve from the nearby commons. In the current analysis we have attempted to differentiate between records relating to the reserve and those which refer to the surrounding land, but this is not always possible.

Species recorded by George Jorden about Oreton.

Adoxa moschatellina	Moschatel
Anacamptis pyramidalis	Pyramidal Orchid
Anagallis tenella	Bog Pimpernel
Anthyllis vulneraria	Kidney Vetch
Artemisia absinthium	Wormwood
Avena fatua	Wild Oat
Blackstonia perfoliata	Yellow-wort
Carlina vulgaris	Carline Thistle
Chaenorhinum minus	Small Toadflax
Chamaemelum nobile	Chamomile
Chrysosplenium alternifolium	Alternate-lvd Gldn-saxifrage
Chrysosplenium oppositifolium	Opposite-lvd Gldn-saxifrage
Coeloglossum viride	Frog Orchid
Colchicum autumnale	Meadow Saffron
Conium maculatum	Hemlock
Cynoglossum officinale	Hound's-tongue
Erigeron acer	Blue Fleabane
Eriophorum angustifolium	Common Cottongrass
Eriophorum vaginatum	Hare's-tail Cottongrass
Frangula alnus	Alder Buckthorn
Gentianella amarella	Autumn Gentian
Gentianella campestris	Field Gentian
Geranium phaeum	Dusky Crane's-bill
Geum x intermedium	Hybrid Avens
Helianthemum nummularium	Common Rock-rose
Helleborus foetidus	Stinking Hellebore
Hyoscyamus niger	Henbane
Inula conyzae	Ploughman's-spikenard
Inula helenium	Elecampane
Kickxia elatine	Sharp-leaved Fluellen
Lolium temulentum	Darnel
Lycopodium clavatum	Stag's-horn Clubmoss
Lythrum portula	Water Purslane
Marrubium vulgare	White Horehound
Myrrhis odorata	Sweet Cicely
Narthecium ossifragum	Bog Asphodel
Nepeta cataria	Cat-mint
Orchis morio	Green-winged Orchid
Persicaria bistorta	Common Bistort
Petasites hybridus	Butterbur
Pinguicula vulgaris	Common Butterwort
Platanthera bifolia	Lesser Butterfly-orchid
Prunus domestica ssp. *insititia*	Damson
Prunus padus	Bird Cherry
Pseudorchis albida	Small-white Orchid
Reseda luteola	Weld
Rhamnus cathartica	Buckthorn
Rhynchospora alba	White Beak-sedge
Rosa mollis	Soft Downy-rose
Sanguisorba minor ssp. *minor*	Salad Burnet
Sedum rupestre	Reflexed Stonecrop
Teucrium chamaedrys	Wall Germander
Trichophorum cespitosum	Deergrass
Umbilicus rupestris	Navelwort
Verbena officinalis	Vervain

Some of the oldest records are by Edward Williams (1762-1833) in the late 18th century. He recorded Deergrass, *Trichophorum cespitosum*, at Silvington Common, which is about a mile to the west, and Common Rock-rose, *Helianthemum nummularium*, on the lime kilns at Farlow, half a mile to the north. George Jorden (1783-1871) is better known for his studies of the Wyre Forest, but he also knew Oreton and Titterstone Clee well. He was born and brought up at Farlow and, although he lived most of his life at Bewdley, is buried at the parish church at Stottesdon. He recorded this area thoroughly, and made copious notes on the plants to be found in the vicinity. Bingham (1992) suggests some which could have been in our area, but just one is specifically for Oreton Common: Common Butterwort, *Pinguicula vulgaris*.

At the beginning of the 20th century William Phillips (1822-1905) made a few lists for the area, including Autumn Gentian, *Gentianella amarella*, and Field Gentian, *G. campestris*, but it seems he stayed in the limestone areas around Oreton and did not venture into Cramer Gutter. J.B. Duncan, a celebrated bryologist, also made many records for this part of the county, some of which are mentioned below. We have to wait for the 1950s before there are any more records: between 1951 and 1953 Miss H.M. Bigwood sent "a number of particularly valuable lists from South Shropshire" to the recorder of the day, Norah Mackenzie. These included, from Oreton Common, just Lesser Skullcap, *Scutellaria minor*, and Marsh Speedwell, *Veronica scutellata*.

It was not until 1962, when Edward Rutter and Charles Sinker spent a day exploring Titterstone Clee (and re-finding Ivy-leaved Bellflower, *Wahlenbergia hederacea*, after a 100 year gap) that the Marsh Gentians were brought to the attention of the botanical community. Sinker (1985) credits their discovery to a Miss Aston, and states that she at least had known about them for a number of years.

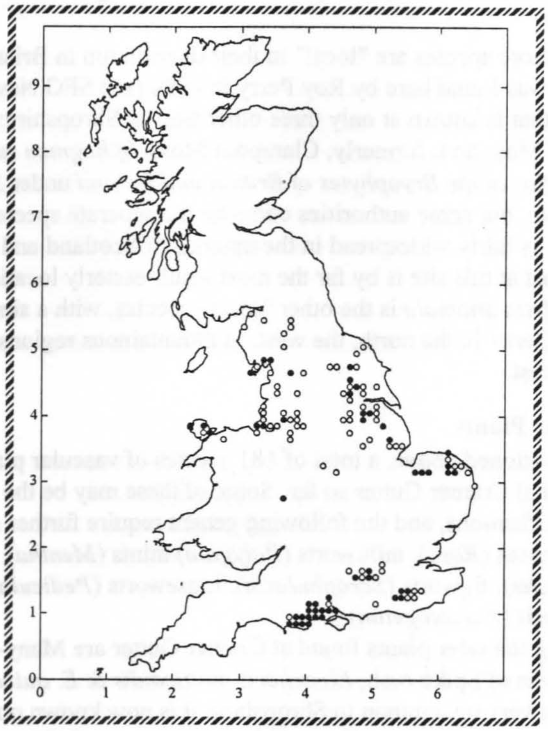
Since 1962 there has been a good deal more survey, and some of the records, for the first time, are specifically for the field which now constitutes the nature reserve. There is a smattering of records through the late 1960s and 1970s, collected for the Flora Project by a number of people, but it is not until 1981, when Martin Wigginton surveyed the site for the Nature Conservancy Council, that the first full species list was made. Further comprehensive surveys were undertaken by English Nature in 1987, by the Wildlife Trust in 1988 and 1989, and by the Flora Group in 1989, 1994 and 1995. Occasional records of interesting species have also been collected throughout this period. The total amounts to about 1,000 records of 181 species of vascular plant, 51 bryophytes, 39 invertebrates and 28 vertebrates which were available for the current analysis. In addition to this, some quadrats and transects were recorded by the Flora Group in 1989.

When all these data are taken together and put into context by comparing with the historical records, it is possible to go some way towards understanding the ecology and importance of this site. Inevitably, perhaps, it creates more questions than answers, but hopefully some of these can be resolved by further field work in the coming seasons.

Marsh Gentians

The main purpose of this report is to assess the conservation status of the Marsh Gentians. This species is notoriously difficult to survey, because non-flowering plants are so difficult to identify. They have, however, attracted a great deal of attention over the years, and studies by J.G.B. Oostermeijer and S.B. Chapman, among others, go a long way to explaining the complex ecology of this species. The following comments are based on their studies.

The distribution of *Gentiana pneumonanthe*. Based on *Scarce Plants in Britain* (1994)



It seems that there is a trap awaiting those who wish to conserve Marsh Gentians. This results from the fact that individual plants are long-lived (20 years or more) while the seeds last for only a short time in the soil (5 years or less). Individual plants flower only every few years, often in response to particular patterns of weather. Reproduction is almost entirely by seed, and bare, damp soil is necessary for the seedlings to become established. If the soil is too dry, or if the cover of vegetation is too dense - either living plants or dead litter ("fegg") - then there will be no new seedlings, and the population will begin to age. This does not show up immediately as a reduction in the number of flowers, because it is of course the mature, long-lived plants which produce the flowers.

So a monitoring programme which relies purely on counting the number of flowers could easily fail to spot a change in the overall population of Marsh Gentians from what Oostermeijer describes as a "dynamic" age-structure to a "senile" one. By the time a decline in the number of flowers is noticed, it could be too late to save the remaining aged plants, and without a persistent seed bank in the soil, recovery may be impossible.

Unsurprisingly, perhaps, the closest we can get to a monitoring programme for Cramer Gutter is the occasional count of flowering spikes. Even this is not very helpful, because the count varies dramatically, depending on the date of the visit. In 1995, for instance, one recorder found just 2 plants while another counted 80. The first record, by Sinker & Rutter, does not give any clue about their abundance, but Mr Breakwell (the farmer) said they were "abundant" in 1969. In 1977 Ellen Heywood-Waddington described them, curiously, as "well established", presumably meaning that there were many plants. Sinker described them as "still flourishing" in 1983, and in 1987 Heywood-Waddington says: "spreading to north-west corner, still flourishing elsewhere". Since then counts have given the following results: 1989 - 60; 1994 - 37; 1995 - 80; 1997 - 18.

Although counting the number of flowers gives some measure of their success, the only way to be able to forecast the performance of the gentians would be to undertake detailed monitoring of the population structure, comparing the proportions of plants in the different age states. It is only by doing this that one can determine whether the population is growing or declining. But monitoring is only one aspect of a conservation strategy, and an understanding of the ecology of a species is also vital to its successful management, so the gentians cannot be considered in isolation from the other species in the site.

Bryophytes

In 1906 J.B. Duncan recorded a few bryophytes at Cramer Gutter: *Aneura pinguis*, *Barbula tophacea*, *Campylopus paradoxus*, *C. pyriformis* and *Drepanocladus revolvens*. These species are typical of the base-rich flushes that are characteristic of the reserve. He also found *Tortella tortuosa*, which is more likely to be found in dry limestone areas, while *Campylium chrysophyllum* is a species of upland ledges and crags. Since then there have been a number of surveys. The list on the right shows the species recorded in recent years, although it is not clear that all of these are to be found within the reserve.

Although Cramer Gutter is best known for its flowering plants, it is at least as important for its bryophyte community. Probably the rarest species in the reserve is *Cephaloziella elachista* - a liverwort that grows in *Sphagnum* bogs and, in heathland, amongst tussocks of *Molinia* (Hill, Preston & Smith, 1991). It is the equivalent of a Red Data Book species, being recorded in just 11 hectads in the British Isles since 1950 (although for a liverwort this only qualifies it for the title "notable") and is provisionally on the European Red Data List. This is its only known location in Shropshire, where it was recorded by Wigginton in 1981 (conf. J.A. Paton).

Bryophytes at Cramer Gutter

Andreaea rupestris
Aulacomnium palustre
Brachythecium rutabulum
Bryum argenteum
Bryum pallens
Bryum pseudotriquetrum
Calliergon cuspidatum
Calypogeia fissa
Campylium stellatum
Campylopus introflexus
Campylopus paradoxus
Campylopus pyriformis
Cephalozia macrostachya
Cephaloziella elachista
Ceratodon purpureus
Cladopodiella fluitans
Dicranum scoparium
Drepanocladus revolvens
Eurhynchium praelongum
Grimmia incurva
Hypnum cupressiforme
Kurzia pauciflora
Leucobryum glaucum
Lophozia sudetica
Lophozia ventricosa
Lunularia cruciata
Mylia anomala
Odontoschisma sphagni
Pleurozium schreberi
Pogonatum aloides
Pogonatum urnigerum
Pohlia nutans
Polytrichum commune
Polytrichum juniperinum
Pseudoscleropodium purum
Ptilidium ciliare
Ptychomitrium polyphyllum
Racomitrium fasciculare
Racomitrium heterostichum
Racomitrium lanuginosum
Rhytidiadelphus squarrosus
Sphagnum auriculatum
Sphagnum capillifolium
Sphagnum compactum
Sphagnum cuspidatum
Sphagnum palustre
Sphagnum papillosum
Sphagnm recurvum
Sphagnum rubellum
Sphagnum subnitens
Sphagnum tenellum

Two other species are particularly rare. *Cephalozia macrostachya* is another liverwort of bogs and wet heathland. It would be rated nationally scarce if it were a flowering plant, with 71 hectad records in Britain since 1950, plus another 9 in Ireland. *Grimmia incurva* is, by contrast, a moss of dry, acidic rock exposures. The Titterstone Clee area is particularly important for this species, holding three of the 16 hectads for it in the British Isles (ibid.). Both were recorded by the Border Bryologists at Cramer Gutter last year.

Four more species are "local" in their distribution in Britain. *Cladopodiella fluitans* was found here by Roy Perry in 1994 (see SFG Newsletter 5). It is a species that is known at only three other sites in Shropshire: Wem Moss, Whixall Moss and, formerly, Clarepool Moss. *Sphagnum rubellum* is shown in the *Atlas of the Bryophytes of Britain and Ireland* under *S. capillifolium sensu lato*, but some authorities consider it a separate species. *Lophozia sudetica* is fairly widespread in the uplands of Scotland and North Wales, but its outpost at this site is by far the most south-easterly location shown in the *Atlas*. *Mylia anomala* is the other "local" species, with a similar distribution to the others - in the north, the west, in mountainous regions and around the New Forest.

Vascular Plants

As mentioned above, a total of 181 species of vascular plant have been recorded at Cramer Gutter so far. Some of these may be the result of misidentifications, and the following genera require further study: the willows (*Salix*), roses (*Rosa*), milkworts (*Polygala*) mints (*Mentha*), water-starworts (*Callitriche*), figworts (*Scrophularia*), louseworts (*Pedicularis*) and pondweeds (*Potamogeton*).

Among the rarer plants found at Cramer Gutter are Many-stalked and Few-flowered Spike-rush, *Eleocharis multicaulis & E. quinqueflora*. The former is very uncommon in Shropshire: it is now known only at Catherton Common and Titterstone Clee, while it has most probably gone from Brown Moss. It should therefore now be considered a county rarity. Sinker & Rutter found this in the vicinity in 1962, and it has since been recorded many times, most recently by John Bingham in 1995 - in the reserve and in the common. Ian Trueman recorded *E. quinqueflora* here first, in 1980 and, although Martin Wigginton also found it 1981, it has not been recorded on the reserve since then.

The orchids at Cramer Gutter are a particularly interesting group. The dactylorchids are renowned for the difficulty of their precise identification, and no fewer than five species and hybrids have been recorded so far, although it is possible that some of these were not within this particular field. Henry Hand found Heath Spotted-orchid, *Dactylorhiza maculata*, and Southern Marsh-orchid, *D. praetermissa*, in 1972. Six years later Diana Kingham noted the latter with Common Spotted-orchid, *D. fuchsii*, and the hybrid between them, *D. x grandis*. *D. maculata* has subsequently been recorded by Wigginton (1981), Sally Budd (1987) and Sarah Stafford (1989). Heywood-Waddington found an Early Marsh-orchid, *D. incarnata* ssp. *pulchella* in 1978 (det. R.H. Roberts). The grid reference given is not quite right for the reserve, but this species was recorded within the site by Wigginton (1981). Mary Fuller and John Bingham have also recorded it nearby, on Catherton Common. This last taxon is probably the most significant: it is described by Clive Stace in his *New Flora* as possibly endemic to Britain, and it has been recorded in only three other sites in Shropshire. Unfortunately it has not been seen in the reserve since 1981 and could be considered extinct there.

Dioecious Sedge, *Carex dioica*, is another uncommon species that is found in the base-rich flushes and mires that are such a characteristic element of the vegetation at Cramer Gutter. It is found in several other locations around the north side of Titterstone Clee, on the Long Mynd, and at Trefonen near Oswestry, but has not been recorded anywhere else in the county for some time. It is widespread in Scotland and the north-west of England but has declined in other parts of England & Wales. There are three records for it at Cramer Gutter, dating from 1979, 1980 and 1981 - but none since then.

Quadrats from the Marsh Gentian area

For each 2m x 2m quadrat the abundance of each species is given on the Domin scale, running from 1 (rare) to 10 (common).

	Q1	Q2	Q3	Q4	Q5
Molinia caerulea	8	5	7	7	7
Potentilla erecta	2	2	5	2	6
Nardus stricta	3	4	1	3	4
Carex panicea	2	3	2	4	4
Gentiana pneumonanthe	2	1	2	3	2
Carex viridula ssp. *oedocarpa*	2	4	-	2	4
Danthonia decumbens	1	3	2	1	-
Agrostis capillaris	6	5	-	3	-
Agrostis stolonifera	-	7	3	-	3
Trifolium repens	4	4	-	2	-
Hydrocotyle vulgaris	2	5	-	3	-
Holcus lanatus	2	4	-	4	-
Ranunculus flammula	1	1	-	2	-
Calluna vulgaris	-	-	4	-	6
Ulex gallii	-	-	4	-	5
Lotus uliginosus	-	4	-	4	-
Festuca rubra	3	-	-	5	-
Erica tetralix	-	-	4	-	4
Juncus effusus	-	3	-	4	-
Galium saxatile	-	3	-	2	-
Carex echinata	-	-	3	2	-
Lotus corniculatus	4	-	-	-	-
Agrostis canina	4	-	-	-	-
Trifolium pratense	3	-	-	-	-
Polygala serpyllifolia	-	-	-	-	2
Pedicularis sylvatica	-	-	-	-	2
Galium palustre	-	2	-	-	-
Cynosurus cristatus	1	-	-	1	-
Juncus squarrosus	-	-	-	-	1
Carex ovalis	-	1	-	-	-
Carex nigra	-	-	1	-	-
Sphagnum sp.	-	-	5	-	-
Other bryophytes	-	-	-	-	1
Litter	-	-	-	-	4
Bare Earth	-	-	-	-	5

Other species which illustrate the base-rich influence of the flushes include Bog Pimpernel, *Anagallis tenella*, and Marsh Arrowgrass, *Triglochin palustris*.

Deergrass, *Trichophorum cespitosum*, is more a plant of acid peaty substrates. Since Edward Williams found it at Silvington Common in about 1800 there are many records for it in the vicinity, including ones by Rutter (1962) and Heywood-Waddington (1977). The first record localised to Cramer Gutter Reserve, *sensu stricto*, was by Wigginton in 1981 and it is known to be there still (Whild, 1996). Other fairly acidophilous species include Round-leaved Sundew, *Drosera rotundifolia*, both Common and Hair's-tail Cottongrass, *Eriophorum angustifolium & E. vaginatum*, and Bog Asphodel, *Narthecium ossifragum*. The latter was first recorded in the vicinity by George Jorden, as related in Leighton's *Flora* of 1841: "Catherton Marshes and Oreton", and all are still present on the reserve.

Fauna

It is more difficult to define a "site" for animals than for plants, and many of the species for which Cramer Cutter is important are not restricted to the reserve. In fact the stream and the heathland opposite (in Catherton Common) are far more important in this context as breeding sites, and the reserve is probably mainly of value as a feeding territory.

The Keeled Skimmer, *Orthetrum coerulescens*, was first discovered in Shropshire at this location by Bingham in 1981. A second location (at Chelmarsh) has since been discovered, possibly by colonisation from here. They breed in the stream and use the reserve and other surrounding areas for feeding. Nine other species of Odonata have been recorded in the locality, including Beautiful Demoiselle, *Calopteryx virgo*, Golden-ringed Dragonfly, *Cordulegaster boltonii*, and Black Darter, *Sympetrum danae*.

The Bog Bush Cricket, *Metrioptera brachyptera*, is a nationally notable species that occurs in wet heathland and bogs, mostly in southern England & Wales. It has been known at Cramer Gutter for some time, and was recorded by Bingham in 1984 and by Rob Stokes in 1994. The Small Pearl-bordered Fritillary, *Boloria selene*, is another notable species (of butterfly) which was found here by Bingham in 1989. The food plant of the caterpillars is probably Common Dog-violet, *Viola riviniana*. The Small Pearl-bordered Fritillary is a national Biodiversity Action Plan species (list 3) and is one species which probably does breed within the reserve.

Two other invertebrates of note have been found at Cramer Gutter, although there has been very little systematic work. *Tipula* (*Savtshenkia*) *grisescens* Zetterstedt was recorded by Alan Stubbs, for English Nature, in 1981. This is a nationally rare species of cranefly that is known in just a few locations, mainly in northern England and Scotland. In 1993 David Heaver found another cranefly, *Tipula* (*Savtshenkia*) *alpinum* Bergroth, 1888, which is also of restricted distribution, mostly in mountainous regions.

Many other animal species have been noted at Cramer Gutter over the years. A list of birds in the area was given by the farmer, Mr Breakwell, in 1969. It includes Long-eared Owl, *Asio otus*, Nightingale, *Luscinia megarhynchos*, Nightjar, *Caprimulgus europaeus*, and Red Grouse, *Lagopus lagopus*.

Vegetation and management

Marsh Gentians in Britain usually occur in a heathland vegetation community known as M16 *Erica tetralix - Sphagnum compactum* wet heath (Rodwell, 1991). This community typically contains all three of the ericoids found in Shropshire - Cross-leaved Heath, *E. tetralix*, Bell Heather, *E. cinerea*, and Heather, *Calluna vulgaris*. All these, and the other constant species of this community, Purple Moor-grass, *Molinia caerulea*, occur at Cramer Gutter. Chris Walker suggests that the vegetation in parts of the reserve approach this, including one area where the gentians grow, but the main population seems to favour a different vegetation community.

In 1989 members of the Flora Group recorded a number of transects and quadrats around the reserve. These were all written up by Pat Parker but never analysed until now. In five 2m x 2m squares, situated around the main population of gentians, they recorded each species and its abundance (see table). These data show that the gentians are growing in a grassland community known as M25 *Molinia caerulea - Potentilla erecta* mire, which is normally a coarse, tussocky type of grassland with deep runnels in between; but at Cramer Gutter the sward is generally short, closely grazed and hardly tussocky at all.

The relative proportion of grassland and heath at Cramer Gutter will need to be studied in more detail. The bryophyte-rich flushes will also constitute a distinct vegetation community that is yet to be determined. Until these more accurate assessments have been made of the vegetation and the populations of gentians, it is difficult to make detailed management prescriptions, and it would be impossible to determine whether or not they were successful.. One thing seems clear, though: the gorse scrub has spread and grown in height considerably over the last 20 years. Descriptions of the site from the early 1980s suggest that there was very little gorse at all, and farmer Breakwell used to chain-harrow the field regularly, which would not be possible now, because of the size of the bushes. On the other hand, Bingham (1992) describes how the "field was at one time densely covered by gorse and unmanaged", so even this is not as clear-cut as it may seem.

Because Marsh Gentians in Britain typically occur in heathland, management often focuses on burning to open the vegetation and create the all-important regeneration niches. However this is obviously not the only way to keep scrub in check, and a range of other techniques might be applicable, including cutting for hay, modifying the grazing regime, and reinstating the chain-harrowing.

Are they really native?

There may be some suspicion that the Marsh Gentians are not entirely native at this site. Of particular significance is that they were apparently overlooked by George Jorden and his mother, Ann, who was a herbalist in Farlow. It seems unlikely that they could have failed to notice this striking plant if it had been there in any abundance.

A number of species of gentian are cultivated for their medicinal properties. The very name is derived from Gentius, King of Illyria (180-167 BC), who is credited with the discovery of the remarkable medicinal properties of this genus. In Gerarde's Herball of 1633, Marsh Gentian is described as "quite worthy of cultivation" and efficacious against a variety of diseases. He also gives precise details of where it can be found (Grieve, 1931). It is not, therefore, inconceivable that they were deliberately or even accidentally introduced at Cramer Gutter some time after 1850 (or perhaps before - John Bingham notes that Jorden did not generally bother to record planted species). However, they must be suitable to the site, as they have clearly lasted a considerable length of time.

It is worth considering what the consequences would be if this population were proven to be introduced. Would that make it less worthy of conservation? Probably not, for several reasons. Firstly, there are many introduced species and man-made habitats of high conservation value, including all hay meadows, coppiced woodlands and black poplars. Secondly, the Marsh Gentians are clearly characteristic of a rare and endangered vegetation type, be it heathland or *Molinia* mire. Conserving the gentians can be considered tantamount to conserving the other plant and animal species that make this such an important and extraordinary site. Finally, there is the cultural and historical interest of the putative introduction, which may well be bound up with the enclosure of the commons and the family of one of the county's most famous botanists.

Conclusions

In some ways it seems that Cramer Gutter has been considered a rather sacred site, being the only place in the county for the Marsh Gentian. But the temptation to cosset them may be self-defeating. Given that there may be reason to suspect an anthropogenic influence in their arrival here, it might be better to adopt a more robust attitude towards their conservation. It is probably essential that the gorse should be removed without delay, but the conservation of a site as delicate and vulnerable as this will depend on a detailed knowledge of its ecology and hydrology to inform management decisions.

The laws of probability make it unlikely that any small population of plants can be preserved in a static area. Growth is an essential factor for survival, and it is the lack of opportunity for growth that makes nature reserves often inadequate for protecting rare species. A successful management strategy for Cramer Gutter should therefore include the possibility of expanding the existing population within the reserve and perhaps, following suitable investigation, into other appropriate sites in the vicinity.

Addendum

As this newsletter is being prepared, in early February, we understand that the Wildlife Trust intends to burn off the gorse during the next couple of weeks, so the coming summer should be an interesting time to visit.

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Conservation News

Alex Lockton

The conservation work at **Brown Moss** continues apace. Many trees have been cut down around the main pool (no. 6) and the quaking bog (no. 9), and the ground flora in these areas has responded well, with a vigorous growth of Heather, *Calluna vulgaris*, and Broad Buckler-fern, *Dryopteris dilatata*. The wet autumn and winter have helped by filling the pools, but there is still a lot of work to be done to ensure the long-term future of this site, and we will have to hope the County Council keeps up the good work in the face of budget cuts and structural reorganisation.

I wrote in the last newsletter that there were no records for the **Old River Bed** in Shrewsbury between 1841 and 1979. This turns out to have been a rather hasty comment, because a list has now turned up. In 1882 William Beckwith published a few records for the area, including Brown Sedge, *Carex disticha*, Lesser Pond-sedge, *C. acutiformis*, and Bladder Sedge, *C. vesicaria*, showing that the site was much the same 100 years ago as it is today. That is particularly interesting from the point of view of the management, because the sedge swamp is clearly rather more stable than might be supposed. Perhaps the main problem with the ORB is a lowering of the water table, rather than natural succession to woodland.

A number of people requested records of **Danewort**, *Sambucus ebulus*, in order to search out the old sites, but no new sightings have been reported. The account in Newsletter 4 (Spring '97) therefore stands. At **Craig Sychtyn** there were 5 **Frog Orchids**, *Coeloglossum viride*, in 1997 - an increase of 1 on the previous year. Together with those in a nearby site, the county's total "crop" for last year was just 15 plants, so this species must still be considered critically endangered.

Starting this year (1998), MAFF is launching a scheme to subsidise farmers who encourage **arable weeds** to grow in the fields and along their hedgerows. The pilot area covers most of north-east Shropshire and south-west Staffordshire. We have supported the scheme by drawing up lists of suitable species and providing baseline data by which to monitor any results. Unfortunately, the area excludes all the sites we already know of with interesting populations of weeds, such as Pimhill Farm, a field near Wem with Cornflower, *Centaurea cyanus*, and the historical sites for Red Hemp-nettle, *Galeopsis angustifolia*, along Wenlock Edge. However, it seems a promising idea and it will be interesting to see if it produces any worthwhile results.

Correspondence

Why are some plants rarer in Shropshire than in Herefordshire?

The second edition of *Rare Plants of Shropshire* prompts speculation about the likely causes of interesting differences in the distributions and frequencies of occurrence of several species in Shropshire, when compared with Herefordshire north of Leominster.

For several of these species, such differences are obviously the consequences of topography, geology, or peculiarities of local climate. For example, some of the plants almost or entirely confined in Shropshire to the Clee Hills - such as **Ivy-leaved Bellflower**, *Wahlenbergia hederacea*, and **Deergrass**, *Trichophorum cespitosum* - do not occur in north Herefordshire because there are no upland mires there. But for other species, the causes of differences in distribution or frequency are less obvious, and it would be interesting to know if these differences are real, or are instead the consequences of differences in the quality or quantity of recording.

Nine species which are rare or extinct in Shropshire are either not so in north Herefordshire, or at least are less rare than north of the border:-

Alopecurus myosuroides, **Black-grass**, sports only three records in Shropshire since 1985, compared with records from eight tetrads in Herefordshire north of Leominster in the same period.

Many arable weeds may be under-recorded (that is, recorded from far fewer tetrads than they occur in) because botanists tend to eschew arable fields, and also because the annual flush of botanical enthusiasm so evident in spring and early summer has run its course by August and September, when skulking round fields of corn and cabbage can bring considerable botanical rewards.

Bromus secalinus, **Rye Brome**, has been recorded recently from two Herefordshire tetrads north of Leominster, in both instances at the edge of cornfields, and in abundance at one of these sites. Could it be overlooked in Shropshire for the same reasons as *Alopecurus myosuroides*? Similarly, *Kickxia elatine*, **Sharp-leaved Fluellen**, is by no means rare on the better-drained, lighter soils in Herefordshire.

Bromus commutatus, **Meadow Brome**, and *Bromus racemosus*, **Smooth Brome**, two very similar species, have been found in about ten meadows in north Herefordshire. They are very probably overlooked and under-recorded. They are not restricted to herb-rich meadows *par excellence*, but seem to favour fields which are cut rather than grazed, where the ground is spared the worst excesses of harrowing, spraying, and reseeding.

Blysmus compressus, **Flat Sedge**, is no longer known in Shropshire, but has recently been found in some plenty on a damp, closely grazed common less than a mile from Shropshire.

Campanula patula, **Spreading Bellflower**, has been recorded in the last few years from seven tetrads in Herefordshire north of Leominster; all but one of these lie west of the main road from Leintwardine to Mortimer's Cross. Perhaps this plant is indeed more frequent in vc36 than in Shropshire.

Gnaphalium sylvaticum, **Heath Cudweed**, grows in small quantity a few feet from Shropshire on Coxall Knoll, but I haven't looked for it on the Shropshire half of the hill.

Groenlandia densa, **Opposite-leaved Pondweed**, has recently been fished out of two small, clear pools only a mile or so south of Shropshire, so this plant may yet turn up further north.

Carex divulsa, **Grey Sedge**, can by no stretch of the imagination be called rare in Herefordshire. Whereas Shropshire has only two post-1985 records, in Herefordshire it has been recorded from 17 tetrads north of Leominster. In Herefordshire it grows on well-drained roadside verges (like *Carex muricata* ssp. *lamprocarpa*, Lesser-spiked Sedge), on well-drained grassy slopes where the bedrock comes near to the surface of the ground (compare *Carex caryophyllea*, Spring Sedge), and also occasionally in churchyards and other large, mature gardens, as at Croft Castle. *Carex divulsa* is rare in Radnorshire, where geology is cited as the excuse. What is Shropshire's?

Luzula forsteri, **Southern Wood-rush**, is not mentioned in *Rare Plants of Shropshire*, presumably because of the definitive statement in Sinker *et al.* that *L. forsteri* "is not known in this region". Yet this plant is quite common in Herefordshire woods. Contemporary botanists would not go so far as to agree with Purchas and Ley (1889) that *L. forsteri* is commoner than *L. pilosa* in Herefordshire; nevertheless *L. forsteri* is recorded from 16 tetrads in Herefordshire north of Leominster. It is plentiful, for example, in Downton Gorge National Nature Reserve. At another site it grows only a few feet from the Shropshire border, so may be expected on some of the wooded slopes of south Shropshire. Like *Carex divulsa* and the *Groenlandia*, *Luzula forsteri* has a southerly distribution in Britain and, with global warming, all three species may be rampaging northwards.

So much for the rare species of Shropshire which seem to prefer Herefordshire. Doubtless other plants too are scarcer in Shropshire than Herefordshire, but not rare enough to merit inclusion in *Rare Plants of Shropshire*. There must also be other species which are commoner in Shropshire than Herefordshire; these too are not listed in *Rare Plants*, and the distribution maps in the *Ecological Flora* are not sufficiently reliable to use for comparison with contiguous districts. *Ceratocapnos claviculata*, **Climbing Corydalis**, though, is quite common in Shropshire woods, whereas in Herefordshire we have only three recent tetrad records for this plant north of Leominster.

How many other species can you think of which, for no apparent reason, are either more or less common in Shropshire than in a neighbouring county? To ask and suggest answers to such questions offers a logical and rewarding extension to and progression from recording the frequencies and distributions of species within any particular region.

Mark Lawley

Some thoughts about *Carex acuta*...

Carex acuta is rare here in Dorset, except in 'New' Dorset, VC 11, in the east. Over 10 years I have only found 2 sites away from rivers, and 22 sites on rivers, often only one clump at a time along miles of bank. I do not know why it is so uncommon, but suspect it has not survived bank maintenance, and the growth of *Phragmites*, which is now much more frequent than in the 1930's.

It has taken me years to get my eye in, but now I feel I can spot it vegetatively (and grazed!) better than the tempting but often confusing black overlapping female spikes. It is **always** tufted, rather than in dense, rhizomatous stands. The ligule is the other constant (if you do not trust leaf-width), short, bluntly acute, with a distinct free portion, rather than sharply-pointed and twice as long in *C. acutiformis*.

David Pearman

More thoughts...

The only other thing you might mention is the ligule characteristic (see Jermy *et al.* [BSBI Handbook No 1]). It seems strange that they only mention the serrulate glume tip in *C. acutiformis* under *C. acuta*. Re habitat preferences, I agree with you as far as Shropshire is concerned. But in Gloucestershire I've seen *C. acuta* growing in marshy places, e.g. washland, where we would expect *acutiformis* (but, interestingly, not far from the lower Severn). Still, that doesn't alter the position here.

Chris Walker

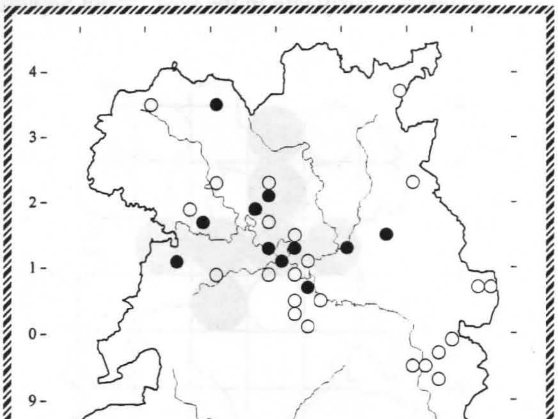
Golden Dock, *Rumex maritimus* L., in Shropshire

Alex Lockton

Although Golden Dock does not quite qualify for any formal status of rarity, it is always an interesting plant to find and it is certainly not common. On the basis of the maps in the *Atlas of the British Flora*, which date mostly from the 1950s, it was selected for inclusion in the BSBI Scarce Plants project in the early 1990s. The final report, however, shows that, far from being present in fewer than 100 hectads in Britain, it was recorded in 191 squares since 1970, and a further 148 prior to that, so it had clearly been underestimated.

Other authorities have made a similar assumptions about its rarity. In Leighton's 1841 *Flora of Shropshire* it is described as "very rare", and just three records are given. Two of these antedate Leighton by some time. Edward Williams (1762-1833) recorded it at Eaton Mascott (SJ50), probably in the 1790s, and Arthur Aikin's (1773-1854) record for Hencott Pool (SJ41) was originally published in 1805, by Turner & Dillwyn. Both of these had therefore been made before William Leighton (1805-1889) was even born. The only 'current' record he gives is by Thomas Eyton (1809-1880), who found it at Wilcott Pool near Nesscliffe.

It seems possible that Golden Dock may have been rather more common than this indicates. It is a plant that favours unglamorous habitats - mud at the bottom of drying-out pools, cattle drinks on the edges of streams, and poached hollows in overgrazed fields. It also has an unusual reproductive strategy: for many years the seeds can remain viable underwater or buried in mud and then, in a hot summer, they will germinate and flower and set seed, only to disappear again until the next suitable year. For this reason it could well be present in many sites where it has not yet been recorded.



Rumex maritimus in Shropshire.
○ = before 1985 ● = since

In popular conceptions of conservation, Golden Dock might be considered something of a pariah. It is tolerant of nutrient-enrichment: artificial fertiliser, cow dung or Canada Goose droppings are all perfectly acceptable. It also favours a drought: the dry summers since 1976 have led to an explosion in its population, in Shropshire, at least. These conditions are often frowned upon in conservation circles, but there certainly used to be a lot more mud and general untidiness in the countryside than there is now, particularly on the commons and village greens; and a number of plants of this sort of habitat - such as Pennyroyal, *Mentha pulegium*, - have declined significantly as a result. In *Scarce Plants* J.O. Mountford describes *R. maritimus* as having 'declined sharply in the last 150 years, due to the elimination of farm ponds and surplus ditches...' but is this the case in Shropshire? In the 200 or so years of botanical recording prior to 1970 there are just 5 records for Golden Dock in the county. Apart from the three in Leighton's *Flora*, it was found by William Beckwith at Acton Burnell in about 1880 and by Edward Rutter at Venus Pool in 1962.

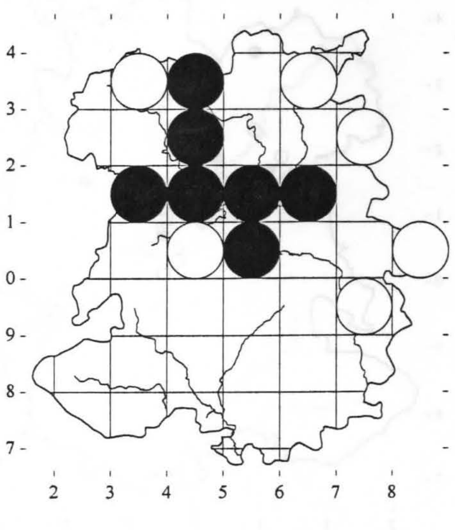
Since then there have been 40 records in 29 sites throughout the county. This may be due to increased recording, but a comparison with Cowbane, *Cicuta virosa* - which occupies a roughly similar habitat and range - gives a ratio of 28 records to 37 during the same periods, a much less dramatic increase. It seems quite likely, then, that Golden Dock really is on the increase in the county, although whether it is increasing its range or the frequency with which it appears remains an open question.

Golden Dock is a very conspicuous plant. The flower-clusters earn it its name, being distinctly yellowish and making it impossible to confuse with anything else when in flower - except perhaps Marsh Dock, *Rumex palustris*. Fortunately the latter is not known to occur in Shropshire and all reports to the contrary have been misidentifications. One such record is given in Sinker's *Flora* (p 236) but is marked unconfirmed. Another interesting case was of a specimen collected by Jane Ing at Stanwardine Pool in 1980 and incorrectly determined for her as *R. palustris*. Fortunately, Jane kept the specimen and this year we sent it on to John Akeroyd, the BSBI referee for docks, who agreed that it was just an immature plant of *R. maritimus* after all. It takes time and care to get records like this sorted out, but it seems well worth the effort.

On the following page there is a key to the species of dock to be found in the county, so no further information about identification should be necessary. If there is and suspicion that a plant might be *R. palustris*, though, a specimen should certainly be collected, preferably fairly late in the year, about September or October.

Records of *Rumex maritimus*

Acton Burnell Park (SJ50)	1880
Allscott (SJ61)	1993
Barnsley Pool (SO79)	1980
Bayston Hill (SJ40)	1980
Boscobel (SJ80)	1978
Betton Moss (SJ63)	1977
Caynton (SJ72)	1976
Cound Lake (JSJ50)	1975
Eaton Mascott Pool (SJ50)	1800
Ebnal Pool (SJ33)	1978
Hencott Pool (SJ41)	1805
Isombridge Pastures (SJ61)	1990
Leaton (SJ41)	1990
Lower Wigmore Clay Pits (SJ31)	1996
Mere Pool (SJ51)	1975, 1994, 1997
Monkmoor Sewage Works (SJ51)	1997
New Pool, Badger (SO79)	1978
Newton on the Hill (SJ42)	1976
Pole Mere (SJ40)	1980
Pool at Betton (SJ63)	1980, 1982
River Severn (SJ41)	1994
River Severn (SJ50)	1975
River Tern at Attingham (SJ51)	1974
River Worfe (SO79)	1976
Shackerley Pool (SJ80)	1976
Shotton Hall (SJ42)	1996
Shrawardine Pool (SJ31)	1984, 1996
Shrewsbury Canal (SJ51/61)	1978, 1987
Stanwardine Pool (SJ42)	1980
The Mere, Ellesmere (SJ43)	1997
The Wood House (SJ80)	1976
Venus Pool (SJ50)	1962, 1975, 1992
Wilcott Pool (SJ31)	1841
Worfield Bog (SO79)	1972, 1976



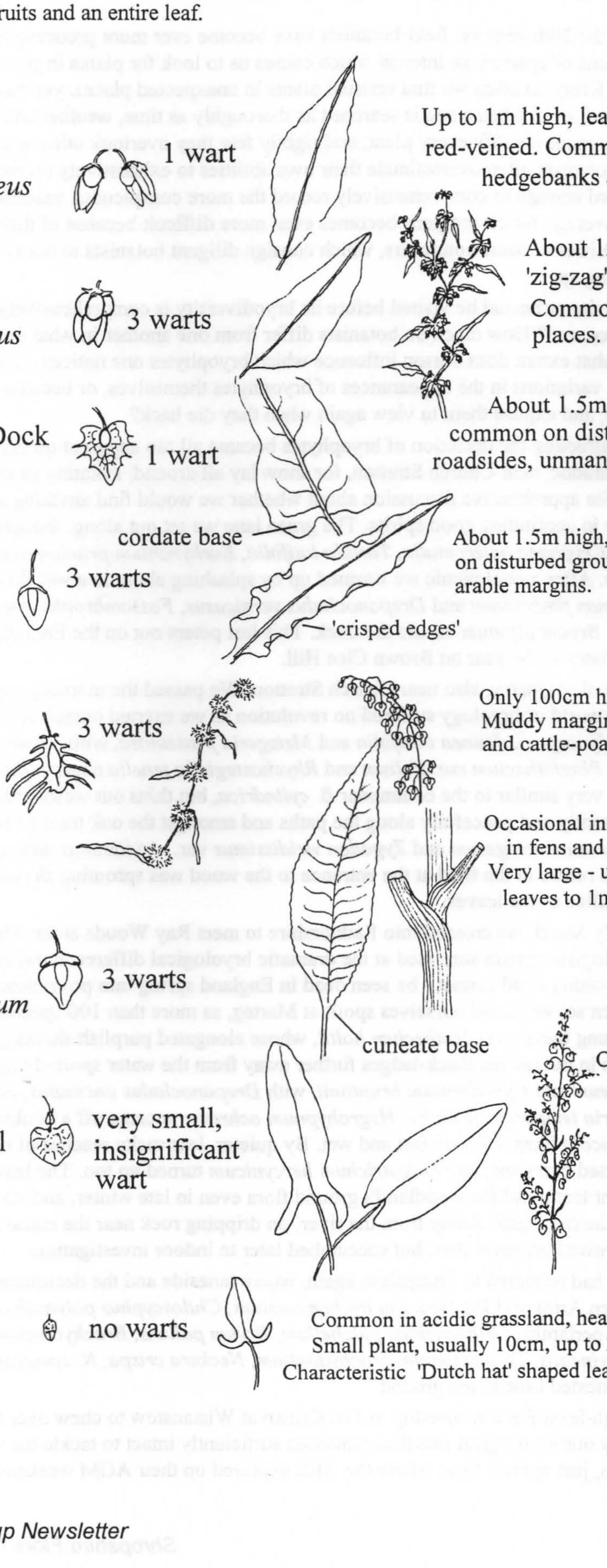
Left: the same map as on the previous page, but with the recording unit altered to the scale of *Atlas 2000*. Despite the apparent increase in this species, our uneven recording effort - particularly around the edges of the county - gives the impression that there has been a decline in recent years.

Reference

Mountford, J.O. 1994. *Rumex maritimus* L. in Stewart, A., Pearman, D.A. & Preston, C.D. *Scarce Plants in Britain*. JNCC, Peterborough (p. 360).

Quick-reference guide to Docks in Shropshire

Please bear in mind that there are many hybrids between these species. Specimens are required for confirmation, preferably with mature fruits and an entire leaf.



Wood Dock *Rumex sanguineus*	1 wart	Up to 1m high, leaves sometimes red-veined. Common in hedgebanks & woodland.
Clustered Dock *R. conglomeratus*	3 warts	About 1m high, stem 'zig-zag' pattern. Common in damper places.
Broad-leaved Dock *R. obtusifolius*	1 wart	About 1.5m high, very common on disturbed ground, roadsides, unmanaged grassland.
Curled Dock *R. crispus*	3 warts	About 1.5m high, very common on disturbed ground, roadsides, arable margins.
Golden Dock *R. maritimus*	3 warts	Only 100cm high. RARE. Muddy margins of ponds and cattle-poached areas.
Water Dock *R. hydrolapathum*	3 warts	Occasional in shallow water in fens and rivers. Very large - up to 2m tall with leaves to 1m long.
Common Sorrel *R. acetosa*	very small, insignificant wart	Common in grassland, typical of neutral pasture and meadows. 0.5m tall with shiny leaves.
Sheep's Sorrel *R. acetosella*	no warts	Common in acidic grassland, heath and moorland. Small plant, usually 10cm, up to 25cm tall. Characteristic 'Dutch hat' shaped leaves.

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The Border Bryologists, 1997

Mark Lawley

During the latter half of the 20th century, field-botanists have become ever more preoccupied with mapping the geographical distributions of species, an interest which causes us to look for plants in places which we would otherwise have passed by. Every so often we find unusual plants in unexpected places, yet many more species doubtless remain overlooked, even when a site is searched as thoroughly as time, weather and inclination allow. Most botanists know they cannot identify every plant, and rightly fear they overlook other species, while our most accomplished field-botanists often overestimate their own abilities to exhaustively record a site in the course of one visit. It is hard enough to comprehensively record the more conspicuous vascular plants in a 10km square, and comparable coverage for cryptogams becomes even more difficult because of their diminutive stature and the great similarities of some congeners, which consign diligent botanists to hours of labour at the microscope after a collecting spree.

How many times must a site or hectad be visited before its bryodiversity is comprehensively catalogued? How many habitats have to be scoured? How much do botanists differ from one another in what they recognise and reliably identify? And to what extent does season influence which bryophytes one notices on a particular outing, either because of temporal variations in the appearances of bryophytes themselves, or because vascular plants obscure them as they grow, and expose them to view again when they die back?

One seasonal influence affecting the detection of bryophytes became all too apparent on our first outing in 1997 at Willstone, Caer Caradoc, near Church Stretton, for snow lay all around, isolating us from the carpet of cryptogams beneath. Despite apprehensive discussion about whether we would find anything at all, six arctic adventurers passed the day in continuing good spirits. The green lane we set out along, though white for our visit, nevertheless gave us *Cryphaea heteromalla*, *Tortula latifolia*, *Eurhynchium praelongum* var. *stokesii*, and *Plagiothecium curvifolium*. After a cool picnic we warmed up by splashing about in a wet flush, where diligence was rewarded with *Sphagnum fimbriatum* and *Drepanocladus vernicosus*, *Fossombronia wondraczekii* on the edge of a peat-cutting, and *Bryum alpinum* beside the track. This last peters out on the English side of the Welsh border, but also turned up later in the year on Brown Clee Hill.

February found us at Soudley Quarry, also near Church Stretton. We passed the morning exploring stream, quarry and woodland. The world of bryology suffered no revolution as we exerted ourselves; the vicinity of the stream provided *Leskea polycarpa*, *Lejeunea cavifolia* and *Metzgeria fruticulosa*, with *Bryum subelegans*, *Brachythecium velutinum*, *Plagiothecium curvifolium* and *Rhychostegiella tenella* nearby. *Barbula vinealis* turned up too; this moss is very similar to the commoner *B. cylindrica*, but thins out westwards in our region. Our afternoon passed pleasantly and peacefully along the paths and amongst the oak trees of Helmeth Wood. *Bryum caespiticium*, *Pogonatum urnigerum* and *Zygodon viridissimus* var. *viridissimus* went on the list, and a pile of clinker and builder's refuse in the field at the entrance to the wood was sprouting *Bryum bicolor* s.s. with prominent bulbils in the axillae of the leaves.

For our excursion in early March we crossed into Radnorshire to meet Ray Woods at the Marteg gorge, Gilfach. Few Border Bryologists remain surprised at the dramatic bryological difference travelling 40 miles west can make. Plants which wouldn't - and cannot - be seen dead in England spring into prominence in the wetter districts of east Wales. Even so, we found ourselves spoilt at Marteg, as more than 100 species came to light during the day. Choice among these were *Isothecium holtii*, whose elongated purplish shoots grew next to *I. myosuroides* on boulders in the ravine. Rock-ledges further away from the water sported bright green cushions of *Leucobryum juniperoideum* and *Cynodontium bruntonii*, with *Drepanocladus uncinatus*, *Ptilidium pulcherrimum* and *Metzgeria temperata* close by. *Hygrohypnum ochraceum* came off a boulder by the rushing water, and *Schistidium alpicola* likes it just as fast and wet. By quieter, less rocky reaches of river, shiny sheets of *Hookeria lucens* impressed everyone, and *Oligotrichum hercynicum* turned up too. The leaves of *Carex laevigata* made a prominent feature of the woodland's ground flora even in late winter, and Ray pointed out a withered *Vicia orobus* on the riverbank. Away from the river, on dripping rock near the entrance to a tunnel *Oxystegus tenuirostris* furrowed brows at first, but succumbed later to indoor investigation.

By the end of March we had retreated to Shropshire again, where laneside and the deciduous woodland of Sallow Coppice near Craven Arms yielded *Homalia trichomanoides*, *Chiloscyphus polyanthos*, *Radula complanata* with very fine perianths, *Orthotrichum pulchellum*, *Bryum pallens*, *Brachythecium populeum*, *B. velutinum* and *Barbula vinealis*. *Trichostomum brachydontium*, *Neckera crispa*, *N. complanata*, and *Rhynchostegiella tenella* attested lime in the ground.

Lunch was taken at a high-level Faculty meeting in The Crown at Wistanstow to chew over next year's programme, but fortunately our bryological faculties remained sufficiently intact to tackle the west end of the Onny Trail in the afternoon, just upriver from where the BBS explored on their AGM weekend three or four years ago. *Cirriphyllum crassinervium*, *Ulota crispa*, *Homalia trichomanoides* and *Tortula muralis* var. *aestiva* as well as var. *muralis* went on to the list.

One measure of success for a Local Interest Group such as ours comes when members from the lower reaches of the learning curve develop sufficient confidence to explore and record alone on extracurricular jaunts. One reprobate from the ranks even strayed south over the Shropshire border, briefly disturbing the somnolent repose of Bryologia Herefordensis. The National Nature Reserve in Downton Gorge, despite having hosted several visits in the past from crack cryptogamists, nevertheless surrendered several new finds: *Frullania fragilifolia*, *Cololejeunea rossettiana* (not seen in Herefordshire since Miss Armitage's day 80 or more years ago), *Fissidens crassipes* in the River Teme, and *Hyocomium armoricum* - common enough in Wales, but scarce this far east. A minute acrocarp from the foot of Castle Bridge in the gorge proved impossible to determine, being sterile. A battery of experts agreed it was a *Seligeria*, but the leaves had rounded apices, quite unlike those of *S. recurvata* which grows in plenty in the gorge.

This romping round the Herefordshire countryside off the lead couldn't go on, of course: there's no telling what might get picked up next. Sure enough, the air turned blue when Our Man In Shropshire caught wind of what was afoot, and the errant explorer was swiftly brought to heel with some well aimed blows of the tongue. But the whiff of freedom had become addictive, and the wilful wandering continued apace in south Shropshire, where the flanks of Titterstone Clee Hill proved productive, with *Leptodontium flexifolium*, *Grimmia donniana*, *Heterocladium heteropterum* var. *flaccidum* and *Plagiomnium cuspidatum* from the common on the east side of the hill. *Kurzia pauciflora* (with perianths) turned up in Cramer Gutter, and *Acaulon muticum* appeared on an anthill above Knowle Wood.

But this is a team-report, and with fall of leaf after the summer recess, our class of cryptogamists met again in October to browse among the bryophytes at Cound, near Cressage, south-east of Shrewsbury. The church wall kept us occupied at the start, with *Barbula rigidula* among a diverse array of other acrocarps. *Bryum inclinatum* and *Trichostomum brachydontium* also found their way into packets, and a wooded streamside supplied *Leskea polycarpa* and *Plagiothecium laetum*, a moss very like *P. curvifolium*, but with leaf-tips not curving down when moist. Nearby, a strange horsetail attracted puzzled glances, and seemed to be the hybrid between *Equisetum arvense* and *E. fluviatile* (*E. x litorale*). In a cabbage-field we found *Phascum cuspidatum* and *Ephemerum serratum* var. *minutissimum*.

What impact have these activities had on the known occurrences and distributions of species of bryophytes in the Marches? When the central Biological Record Centre's discs flopped onto the County Recorders' doormats recently, carrying details of regional bryological records, it became apparent that the recording of mosses and liverworts in our region has been uneven and incomplete. A few attractive sites have been repeatedly explored and well recorded, but our extant corpus of records gives a misleading impression of which species are common and widespread in the border counties. Bryologists can be sure of an exciting haul from an ancient woodland or a calcareous flush - habitats which understandably attract attention. But the distribution maps in the Atlas of the Bryophytes of Britain and Ireland do not tell us which are the abundant species in the commonest habitats of our region: sown pastures, roadside verges, suburbia, etc. Species shown in the Atlas as widespread but absent from a majority of 10km squares may turn up in many more hectads (and be commoner) than currently supposed if we alter our search-patterns and strategies for recording. In Shropshire nearly 20% of all the 10km square records have been gathered in the last five years, and if this rate of accreting records continues, we may be sure of substantially altering our understanding of what occurs in our area, and where, and how frequently.

How often is failure to find species on a site or in a grid- square as reliable as their reported presence elsewhere? Our globe may have been charted long since, with coastlines and continents satisfactorily mapped in olden times, as the world turned pink. But much exploring and mapping of a more subtle kind remains to be done before we can as confidently say where many widespread species do not grow as we can of where they do. When white spots indicate absence as certainly as black dots indicate presence, we can regard them as scientific facts, as we so like to do when admiring our beloved distribution-maps.

If you would like to join our 1998-99 meetings, please write in September for a copy of the programme.

Mark Lawley
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Ludlow
SY8 2NG

The Shropshire Flora Group

The Flora Group is an association of professional and amateur botanists concerned with botany, ecology and conservation in Shropshire. It is a voluntary society with the aim of promoting of the study and appreciation of botany; conducting research into and recording of the flora and plant communities of Shropshire (Vice-county 40); and co-operating with other organisations to promote the conservation of the flora of Shropshire.

Membership is currently £5 p.a. or £10 for 3 years. Members receive a newsletter twice a year and are invited to attend our training courses, field meetings and an annual indoor meeting each winter. We collect records on the distribution of plants on behalf of the BSBI and are currently working towards the forthcoming *Atlas 2000*. The Flora Group also operates a comprehensive records centre service, available free to members, and we can assist with the identification of difficult plants and the validation of records.

A provisional committee has recently been appointed, and elections will be held in the autumn. In the meantime all enquiries and records should be sent to Sarah Whild, at the address given in the front of the newsletter.

Membership*

Janet Allwood, Ludlow	
Kate Andrew, Ludlow Museum	
Audrey Ashwell, Craven Arms	SO59
N.H.Barnett, Shrewsbury	
John Bingham, Kidderminster	SO77
Peter Boyd, Shrewsbury Museum	
Jonathan Briggs, British Waterways	
Joan Brown, Bridgnorth	SO79
Arthur Chater, Aberystwyth	
Julie Clarke, Macclesfield	SJ63 & 64
John Clayfield, Hopton Castle	SO37
Dr Eleanor Cohn, University of Wolverhampton	
Fiona Cooper, Marshbrook	
Ruth Dawes, Trefonen	SJ22
Margaret Deadman, Trefonen	
Anne Dyer, Westhope College	SO48
Joan Edwards, Maesbury	
Peter Ellis, Minsterley	
Gill Evans, The Environment Agency	
Jonathan Felton, Leegomery	
Rosa Ford, Whitchurch	
Audrey Franks, Manchester	SJ63 & 64
Mary Fuller, Aston Munslow	
Peter Gateley, Ormskirk	
Dr Hilary Gee, Bayston Hill	
Greg Glendell, North Shropshire Countryside Project	
Pam & Roger Green, Ratlinghope	
Vivienne Hodges, Shrewsbury	
Dr H. Hughes, Albrighton	
Mary Hignett, Oswestry	
Jean Hooson, Whitchurch	SJ53 & 54
Jane Ing, Weston Lullingfields	SJ32
Mary Johnson, Ashford Carbonel	
Alison Jones, FWAG	
Victoria Jones, Shrewsbury	
Adam Kennerley, Shropshire Hills Countryside Unit	
Dr Sylvia Kingsbury, Wentnor	SO38 & 39
Mark & Clare Kitchen, Gloucestershire	
Ray Knowles, Hanwood	
Mark Lawley, Ludlow	
Louisa Loades, Newport	
Alex Lockton, Shrewsbury	SJ41
Ed Lomas, Shrewsbury	
Diana Long, Bayston Hill	
Gerald Longley, Shrewsbury & Atcham Borough Council	
Dr John Mackintosh, Stanton Lacy	
Bernard Martin, Shrewsbury	
Dr John Mason, Bayston Hill	
Alison Morton, Ludlow	
Ed Mountford, Wem	
Dennis Nesbit, Church Stretton	
Dr Steve O'Donnell, Wolverhampton	
Laila O'Donohue, Bayston Hill	
Prof John Packham, Bridgnorth	
Pat Parker, Weston Lullingfields	SJ42 & 43
David Pearman, Dorchester	
Jackie Pedlow, Llynclys	
Dr Franklyn Perring, Peterborough	SJ73
Susan Pinsent, Church Stretton	
Tom Preece, Llynclys	
Chris Preston, Monks Wood	
Will Prestwood, Cross Houses	SJ50
Philip Pope, Abercraf, Powys	
Jan Pursaill, Shropshire Wildlife Trust	
Ron Shoubridge, Ludlow	
Charles Sinker, Shrewsbury	
Prof Clive Stace, Leicester	
Rob Stokes, Coton Hill	
Jane Sutton, The Woodland Trust	
Tina Teearu, Shrewsbury	
Peter & Stephanie Thomson, Herefordshire	
Bill Thompson, Dilwyn, Herefordshire	
John Thompson, Harmer Hill	
Dr Kate Thorne, Church Pulverbatch	
Sue Townsend, Preston Montford Field Centre	
Prof Ian Trueman, University of Wolverhampton	SJ70
John Tucker, Shropshire Wildlife Trust	
Marjorie Wainwright, Oswestry	
Chris Walker, Condover	SJ40
Tom Wall, Lydbury North	
Sarah Whild, Shrewsbury	SJ51
Mary White, Bayston Hill	
Philip Whittle, Wistanstow	
Joan Wilkinson, Wistanstow	
Pat Wycherley, Shrewsbury	
Dorothy Young, Clun	

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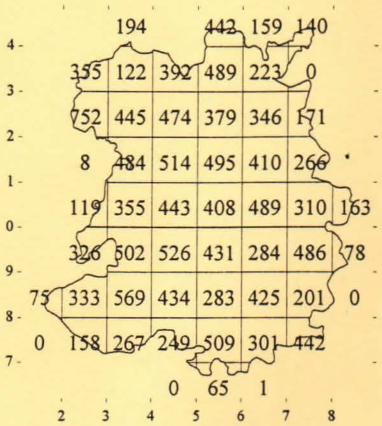
* Some recorders are responsible for 10km squares, or hectads. These are shown in the right-hand column.

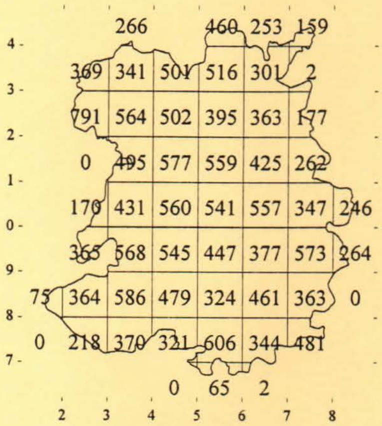
Progress towards Atlas 2000

Showing the number of taxa of vascular plants recorded in each hectad in Shropshire, since 1985.

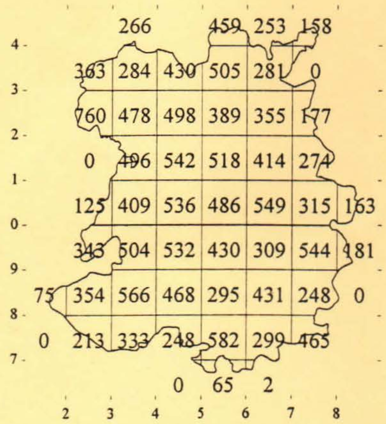
To 1995



To 1997



To 1996



Ever